

WHAT IS CLAIMED IS:

1. A decoding apparatus for data of moving pictures for decoding encoded data of moving pictures encoded using a predictive encoding system, comprising:

decoding means for decoding first encoded data made up of moving pictures up to a preset moving picture and second encoded data made up of moving pictures beginning from a moving picture displayed next to the preset moving picture at a speed faster than the display speed of the encoded data; and

output control means for controlling the outputting of decoded moving pictures based on the time management information of each moving picture of said encoded data.

2. The decoding apparatus for data of moving picture according to claim 1 wherein the output control means change reference synchronization signals to a second time point when the reference synchronization signals are equal to a first time point to output moving pictures beginning from a moving picture displayed at said second time point.
3. The decoding apparatus for data of moving picture according to claim 1 wherein said decoding means time-divisionally decode said first encoded data and the second encoded data.
4. The decoding apparatus for data of moving picture according to claim 1 further comprising:

storage means for transiently storing the moving picture data decoded by said

decoding means;

 said decoding means decoding said first encoded data and subsequently decoding said second encoded data beginning from a moving picture which starts to be displayed at a time point skipped a preset time interval from said first time point.

5. The decoding apparatus for data of moving picture according to claim 1 wherein said decoding step decodes encoded data of moving pictures encoded using the MPEG (Moving Picture Experts Group) system.

6. A decoding method for data of moving pictures for decoding encoded data of moving pictures encoded using a predictive encoding system, comprising:

 a decoding step for decoding first encoded data made up of moving pictures up to a preset moving picture and second encoded data made up of moving pictures beginning from a moving picture displayed next to said preset moving picture at a speed faster than the display speed of the encoded data; and

 an output control step for controlling the outputting of decoded moving pictures based on the time management information of each moving picture of said encoded data.

7. The decoding method for data of moving picture according to claim 6 wherein the output control step changes reference synchronization signal to a second time point when the reference synchronization signal is equal to a first time point to output moving pictures beginning from a moving picture displayed at said second time point.

8. The decoding method for data of moving picture according to claim 6 wherein said

decoding step time-divisionally decode said first encoded data and the second encoded data.

9. The decoding method for data of moving picture according to claim 6 further comprising:

a storage step for transiently storing the moving picture data decoded by said decoding step;

said decoding step decoding said first encoded data and subsequently decoding said second encoded data beginning from a moving picture which starts to be displayed at a time point skipped a preset time interval from said first time point.

10. The decoding method for data of moving picture according to claim 6 wherein said decoding step decodes encoded data of moving pictures encoded using the MPEG (Moving Picture Experts Group) system.

11. A decoding apparatus for data of moving picture for decoding encoded data of moving pictures encoded using a predictive encoding system, comprising:

first decoding means for decoding encoded data up to a moving picture whose display is completed at a first time point corresponding to a preset display time point;

second decoding means for decoding encoded data beginning from a moving picture which starts to be displayed at a second time point skipped a preset time interval from said first time point;

output control means for controlling the outputting of a moving picture decoded by said first decoding means or said second decoding means when the time

management information of said encoded data coincides with reference synchronization signals; and

switching means for changing said reference synchronization signals to said second time point when the reference synchronization signals are equal to said first time point for switching the moving picture output-controlled by said output control means to the picture decoded by said second decoding means.

12. The decoding apparatus for data of moving picture according to claim 11 wherein

 said second decoding means decodes encoded data required in case of decoding the moving picture which starts to be displayed at said second time point up to a picture displayed at said second time point before said first time point.

13. The decoding apparatus for data of moving picture according to claim 11 wherein

 said first decoding means and the second decoding means decode encoded data of moving pictures encoded using the MPEG (Moving Picture Experts Group) system.

14. A decoding method for data of moving picture for decoding encoded data of moving pictures encoded using a predictive encoding system, comprising:

 a first decoding step for decoding encoded data up to a moving picture whose display is completed at a first time point corresponding to a preset display time point;

 a second decoding step for decoding encoded data beginning from a moving picture which starts to be displayed at a second time point skipped a preset time interval from said first time point;

 an output control step for generating a reference synchronization signal and for

controlling the outputting of a moving picture decoded by said first decoding step or said second decoding step when the time management information coincides with reference synchronization signals; and

a switching step for changing said reference synchronization signal to said second time point when the reference synchronization signal is equal to said first time point for switching the moving picture output-controlled by said output control step to the picture decoded by said second decoding step.

15. The decoding method for data of moving picture according to claim 14 wherein

said second decoding step decodes encoded data required in case of decoding the moving picture which starts to be displayed at said second time point up to a picture displayed at said second time point before said first time point.

16. The decoding method for data of moving picture according to claim 14 wherein

said first decoding step and the second decoding step decode encoded data of moving pictures encoded using the MPEG (Moving Picture Experts Group) system.

17. A recording apparatus for moving picture data comprising:

encoding means for encoding moving picture data using a predictive encoding system;

designation information supplying means for supplying the information designating a decoding starting picture and a display starting picture in said moving picture data and for supplying the information designating a decoding terminating picture and a display terminating picture in said moving picture data; and

recording means for recording moving picture data encoded by said encoding means and the designation information supplied by said designation information supplying means.

18. The recording apparatus according to claim 17 wherein

 said encoding means encodes the position of a leading data byte of a decoding starting picture on an encoding data file of moving pictures as the information designating the decoding starting picture in a reproducing unit of the moving picture data.

19. The recording apparatus according to claim 17 wherein

 said encoding means encodes a display start time point of the display starting picture as the information designating the decoding starting picture in a reproducing unit of the moving picture data.

20. The recording apparatus according to claim 17 wherein

 said encoding means encodes the position of the last data byte of a decoding terminating picture on an encoding data file of moving pictures as the information designating the decoding terminating picture in a reproducing unit of the moving picture data.

21. The recording apparatus according to claim 17 wherein

 said encoding means encodes a display termination time point of a display terminating picture as the information designating the decoding starting picture in a reproducing unit of the moving picture data.

22. The recording apparatus according to claim 17 wherein

 said encoding means encodes a display start time point of a display terminating picture as the information designating the decoding terminating picture in a reproducing unit of the moving picture data.

23. A recording method for moving picture data comprising:

 encoding means for encoding moving picture data using a predictive encoding system;

 supplying the information designating a decoding starting picture and a display starting picture in said moving picture data and for supplying the information designating a decoding terminating picture and a display terminating picture in said moving picture data; and

 recording encoded moving picture data and the supplied designation information.

24. The recording method for moving picture data according to claim 23 further comprising:

 encoding the position of a leading data byte of a decoding starting picture on an encoding data file of moving pictures as the information designating a decoding starting picture in a reproducing unit of the moving picture data.

25. The recording method for moving picture data according to claim 23 further comprising:

 encoding a display start time point of the display starting picture as the

information designating the display starting picture in a reproducing unit of the moving picture data.

26. The recording method according to claim 23 further comprising:
 - encoding the position of the last data byte of a decoding terminating picture on an encoding data file of moving pictures as the information designating the decoding terminating picture in a reproducing unit of the moving picture data.
27. The recording method according to claim 23 further comprising:
 - encoding a display termination time point of a display terminating picture as the information designating the decoding starting picture in a reproducing unit of the moving picture data.
28. The recording method according to claim 23 further comprising:
 - encoding a display start time point of a display terminating picture as the information designating the decoding terminating picture in a reproducing unit of the moving picture data.
29. A recording medium on which there are recorded the information designating a decoding starting picture and a display starting picture in moving picture data and the information designating a decoding terminating picture and a display terminating picture in moving picture data along with encoded data of moving pictures encoded using the predictive encoding system.
30. The recording medium according to claim 29 wherein
 - the position of a leading data byte of a decoding starting picture on an encoding

data file of moving pictures is recorded thereon as the information designating the decoding starting picture in a reproducing unit of the moving picture data.

31. The recording medium according to claim 29 wherein

a display start time point of the display starting picture is recorded thereon as the information designating the decoding starting picture in a reproducing unit of the moving picture data.

32. The recording medium according to claim 29 wherein

the position of the last data byte of a decoding terminating picture on an encoding data file of moving pictures is recorded thereon as the information designating the decoding terminating picture in a reproducing unit of the moving picture data.

33. The recording medium according to claim 29 wherein

a display termination time point of a display terminating picture is recorded thereon as the information designating the display terminating picture in a reproducing unit of the moving picture data.

34. The recording medium according to claim 29 wherein

a display start time point of a display terminating picture is recorded thereon as the information designating the decoding terminating picture in a reproducing unit of the moving picture data.

35. A decoding apparatus for moving picture data comprising:

decoding means for decoding encoded data of moving pictures encoded using

a predictive encoding system; and

control means for controlling the decoding and the outputting of moving picture data by said decoding means based on the information designating a decoding start picture and a display start picture in moving picture data and on the information designating a decoding terminating picture and a display terminating picture in said moving picture data.

36. The decoding apparatus for moving picture data according to claim 35 wherein said control means controls the decoding and the outputting of moving picture data by said decoding means based on the position of a leading data byte of a decoding start picture on an encoding data file of moving pictures indicated as the information specifying a decoding starting picture in a reproducing unit of moving picture data.

37. The decoding apparatus for moving picture data according to claim 35 wherein said control means controls the decoding and the outputting of moving picture data by said decoding means based on a display starting time point of a display starting picture indicated as the information designating a display starting picture in a reproducing unit of moving picture data.

38. The decoding apparatus for moving picture data according to claim 35 wherein said control means controls the decoding and the outputting of moving picture data by said decoding means based on the position of the last data byte of a decoding terminating picture on an encoding data file of moving pictures indicated as the information specifying a decoding terminating picture in a reproducing unit of moving

picture data.

39. The decoding apparatus for moving picture data according to claim 35 wherein said control means controls the decoding and the outputting of moving picture data by said decoding means based on a display end time point of a display terminating picture indicated as the information specifying the display terminating picture in a reproducing unit of moving picture data.

40. The decoding apparatus for moving picture data according to claim 35 wherein said control means controls the decoding and the outputting of moving picture data by said decoding means based on a display starting time point of a display terminating picture indicated as the information specifying the display terminating picture in a reproducing unit of moving picture data.

41. A decoding method for moving picture data comprising:

decoding encoded data of a moving picture encoded using a predictive encoding system based on the information specifying a decoding starting picture and a display starting picture in moving picture data and on the information specifying a decoding terminating picture and a display terminating picture in moving picture data; and

outputting the decoded data.

42. The decoding method for moving picture data according to claim 41 comprising:

decoding encoded data of moving picture data encoded by a predictive encoding system based on the position of a leading data byte of a decoding start picture on an encoding data file of moving pictures indicated as the information

specifying a decoding starting picture in a reproducing unit of moving picture data; and
outputting the decoded data.

43. The decoding method for moving picture data according to claim 41 comprising:
decoding encoded data of moving picture data encoded by a predictive
encoding system based on a display starting time point of a display starting picture
indicated as the information designating a display starting picture in a reproducing unit
of moving picture data; and
outputting the decoded data.

44. The decoding method for moving picture data according to claim 41 comprising:
decoding encoded data of moving picture data encoded by a predictive
encoding system based on the position of the last data byte of a decoding terminating
picture on an encoding data file of moving pictures indicated as the information
specifying a decoding terminating picture in a reproducing unit of moving picture data;
and
outputting the decoded data.

45. The decoding method for moving picture data according to claim 41 comprising:
decoding encoded data of moving picture data encoded by a predictive
encoding system based on a display end time point of a display terminating picture
indicated as the information specifying the display terminating picture in a reproducing
unit of moving picture data; and
outputting the decoded data.

46. The decoding method for moving picture data according to claim 41 comprising:

decoding encoded data of moving picture data encoded by a predictive encoding system based on a display starting time point of a display terminating picture indicated as the information specifying the display terminating picture in a reproducing unit of moving picture data; and

outputting the decoded data.

47. A continuous reproduction possibility verifying apparatus for encoded data wherein

in reproducing a series of encoded data encoded using a predictive encoding system by decoding pictures of said encoded data from a first display starting point picture of said encoded data to a first display terminating point picture of said encoded data, designated as an out-point picture in skipping processing of said encoded data, then skipping the decoding from said first display terminating point picture to a second display starting point picture designated as an in-point picture in said skipping processing, and by decoding pictures from said second display starting point picture to a second display terminating point picture, it is verified, based on the time difference between a display time point of said first display starting point picture and a display time point of said first display terminating point picture, whether or not continuous display of said first display terminating point picture and said second display starting point picture is possible.

48. The continuous reproduction possibility verifying apparatus for encoded data

according to claim 47 wherein

storage time during which said encoded data required for decoding said second display starting point picture is stored in memory means after being read out from a recording medium prior to outputting to decoding means is calculated, based on the volume of said encoded data required for decoding said second display starting point picture and the bitrate of said encoded data;

said time difference between the display time point of said first display starting point picture and the display time point of said first display terminating point picture is compared to said storage time;

it is verified that continuous display of said first display terminating point picture and said second display starting point picture is possible if said time difference is not less than said storage time; and

it is verified that continuous display of said first display terminating point picture and said second display starting point picture is not possible if said time difference is less than said storage time.

49. The continuous reproduction possibility verifying apparatus for encoded data according to claim 47 wherein

said encoded data is obtained on encoding using the MPEG (Moving Picture Experts Group) system.

50. A continuous reproduction possibility verifying apparatus for encoded data wherein

in reproducing a series of encoded data encoded using a predictive encoding system by decoding pictures of said encoded data from a first display starting point picture of said encoded data to a first display terminating point picture of said encoded data, designated as an out-point picture in skipping processing of said encoded data, then skipping the decoding from said first display terminating point picture to a second display starting point picture designated as an in-point picture in said skipping processing, and by decoding pictures from said second display starting point picture to a second display terminating point picture, it is verified, based on the time difference between a display time point of said first display starting point picture and a display time point of said first display terminating point picture, whether or not continuous display of said first display terminating point picture and said second display starting point picture is possible.

51. The continuous reproduction possibility verifying method for encoded data according to claim 50 comprising:

calculating the storage time during which said encoded data required for decoding said second display starting point picture is stored after being read out from a recording medium in memory means prior to outputting to decoding means, based on the volume of said encoded data required for decoding said second display starting point picture and the bitrate of said encoded data;

comparing said time difference between the display time point of said first display starting point picture and the display time point of said first display terminating

point picture to said storage time;

verifying that continuous display of said first display terminating point picture and said second display starting point picture is possible if said time difference is not less than said storage time; and

verifying that continuous display of said first display terminating point picture and said second display starting point picture is not possible if said time difference is less than said storage time.

52. The continuous reproduction possibility verifying apparatus for encoded data according to claim 50 wherein

said encoded data is obtained on encoding using the MPEG (Moving Picture Experts Group) system.